WEISS

DAC205/DAC205-MK2
OPERATING MANUAL



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INTRODUCTION

Congratulations on purchasing the Weiss DAC205/DAC205-MK2 D/A Converter !

The DAC205 is a stereo 24 bit / 192kHz D/A converter which supports the following conversions:

- AES/EBU or S/PDIF on RCA to analog
- AES/EBU or S/PDIF on Toslink to analog

The MK2 version features a newly upgraded DAC board with an ES9028PRO chip and a near-zero-ohm output stage, further enhancing performance with difficult cables or lowimpedance headphones. In terms of connectivity and all other features, it is identical to the initial version.

There also is the DAC204/DAC204-MK2 model available which has an INT204 type USB interface added to the DAC205 features.

Features

- **Inputs:** There are two AES/EBU (S/PDIF) inputs on RCA and Toslink (optical) connectors. The sampling frequencies supported are 44.1, 48, 88.2, 96, 176.4 or 192 kHz.

- **Outputs:** The outputs are balanced on XLR connectors and unbalanced on RCA connectors. The XLR outputs have a 6dB higher level than the RCA outputs. The XLR outputs (XLR pin 2 or pin 3) must not be shorted to ground, i.e. there is no servo circuitry implemented.

- **Output Level:** Two switches allow to set 4 different output levels at 10dB steps.

- **Sampling Rates, Word-length:** 44.1, 48, 88.2, 96, 176.4, 192 kHz at up to 24 Bits are supported.

- **Jitter suppression:** Several signal reclocking schemes are combined for a high jitter attenuation.

- **Converters:** Oversampling sigma delta D/A converters are used. Four D/A Converters per audio channel are operated in parallel for enhanced signal to noise performance.

- **Power Supply:** An external power supply is used. The required voltage is between 6V and 9V.

- **Front-panel elements:**

  - A power on/off switch with LED.

  - An input selection switch.

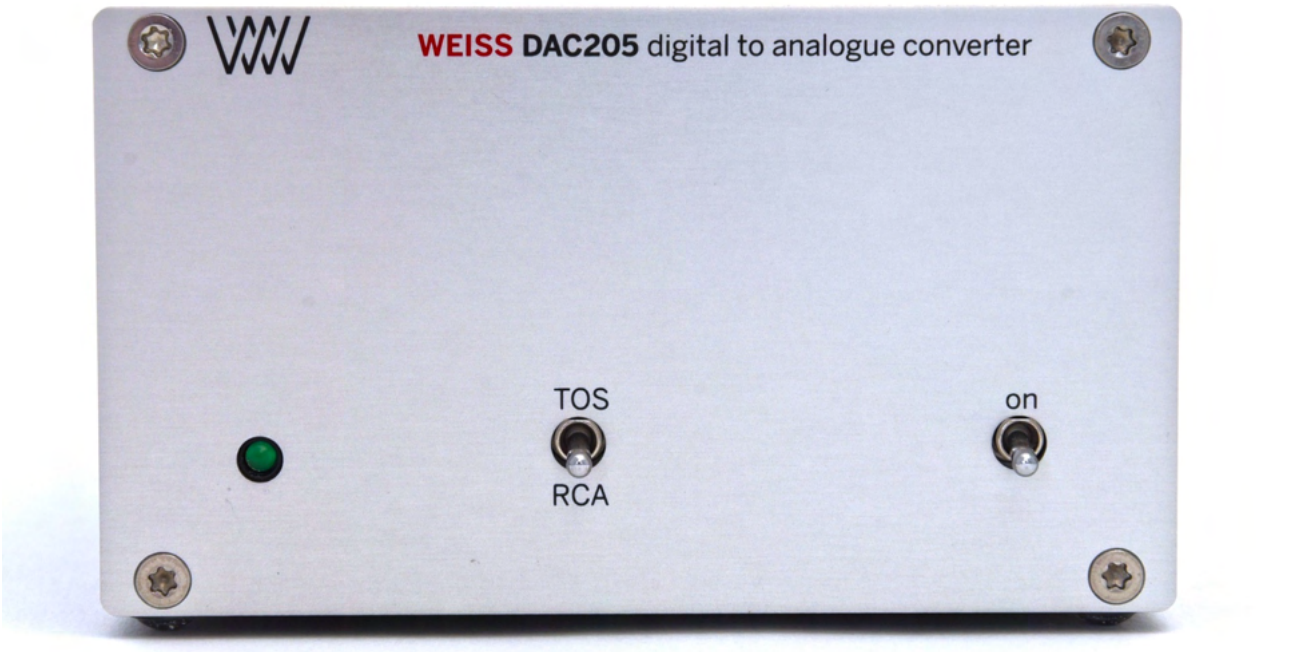
- **Back-panel elements:**

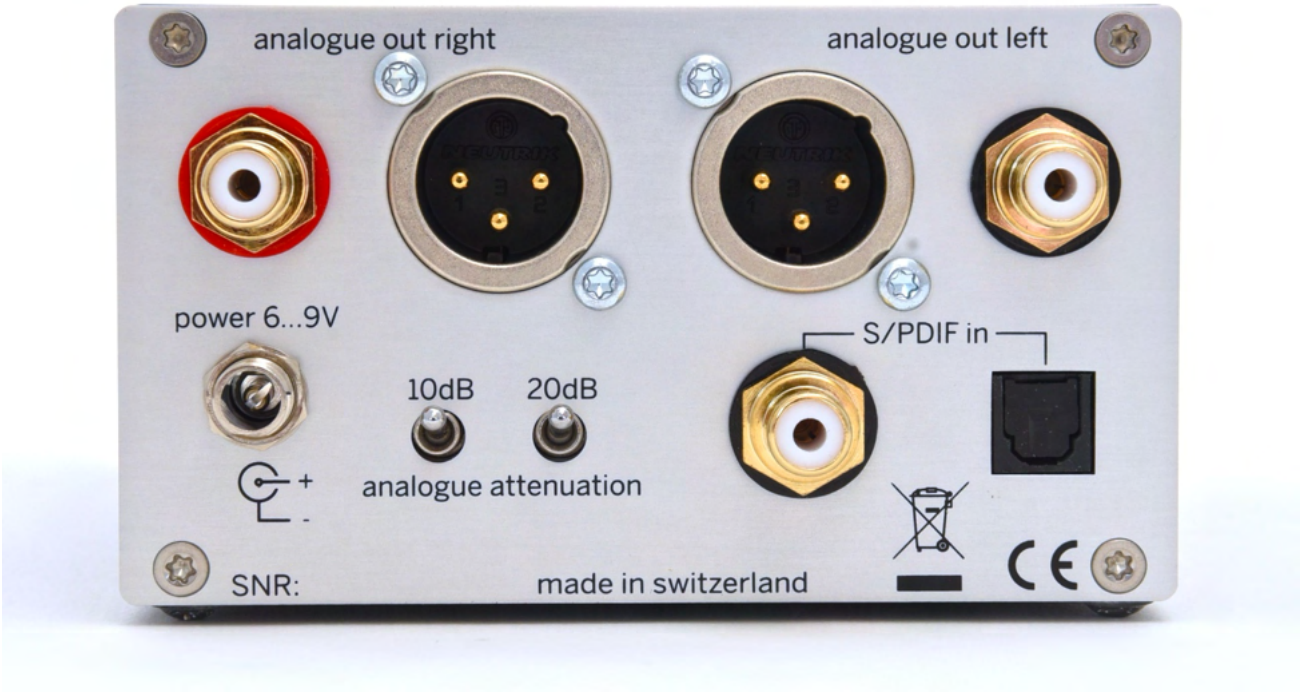
  - Analog outputs on XLR and RCA connectors.

  - Digital inputs (one RCA and one Toslink connector).

  - External power supply connector.

  - Two toggle switches for output level setting.


WEISS DAC205 digital to analogue converter
TOS
RCA
on


analogue out right
analogue out left
power 6...9V
10dB
20dB
analogue attenuation
S/PDIF in
SNR:
made in switzerland

OPERATION

Unpacking and Setup of the DAC205
Carefully unpack the DAC205. The following items should be enclosed:

- The DAC205 D/A Converter unit
- A power supply
- Warranty Card

Power Supply Connection
Connect the enclosed power supply or any other appropriate supply to the input socket. See the Technical Data section for more information on the power supply.

Input Connection
The DAC205 operates either with the RCA input or the optical Toslink input. Select the input with the appropriate switch. The data format can be either AES/EBU or S/PDIF.

Output Connection
Connect your preamplifier or power amplifier to the output connectors of the DAC204.

Use either the symmetrical (balanced) lines (XLR) or the asymmetrical (unbalanced) lines (RCA). It is also possible to use both outputs simultaneously. We do not recommend to connect a low impedance headphone and an amplifier simultaneously though, as the headphone may compromise the signal going to the amplifier.

If the XLR outputs are used to connect to an unbalanced input then make sure that XLR pin 1 is used for the ground connection and XLR pin 2 is used as the hot signal. XLR pin 3 must be left open.

If there isn't any signal at the DAC204 outputs check the power switch / LED and also make sure the sampling frequency is in the range supported. See the Technical Data section for details.

Output Level
The output level can be set with the two switches in 10dB steps. Four different output levels can be selected.

TECHNICAL DATA

Digital Inputs:
(1) RCA connector, (1) Toslink connector (optical)
- All inputs accept professional or consumer standard, i.e. accept AES/EBU or S/PDIF signals.
- Sampling frequencies: 44.1, 48.0, 88.2, 96.0, 176.4 or 192 kHz on the RCA input.
- Sampling frequencies: 44.1, 48.0, 88.2, 96.0 kHz on the Toslink input.
- Maximum input word-length: 24 Bits.

Analog Outputs:

(2) XLR connectors (hot output on pin 2, **not** servo controlled), DC coupled, short circuit proof output circuitry, Output impedance: DAC205: 44 Ohm, DAC205-MK2: close to 0 Ohm
(2) RCA connectors, DC coupled, short circuit proof output circuitry, Output impedance: DAC205: 22 Ohm, DAC205-mk2: close to 0 Ohm

Output level: Selectable by two toggle switches, 4 settings:

XLR outputs:
7.5 Vrms, +19.7 dBu, with a 0 dBFS sinewave input
2.3 Vrms, +9.7 dBu, with a 0 dBFS sinewave input
0.75 Vrms, -0.3 dBu, with a 0 dBFS sinewave input
0.23 Vrms, -10.3 dBu, with a 0 dBFS sinewave input

RCA outputs:
3.75 Vrms, +13.7dBu, with a 0 dBFS sinewave input
1.15 Vrms, +3.7dBu, with a 0 dBFS sinewave input
0.375 Vrms, -6.3dBu, with a 0 dBFS sinewave input
0.115 Vrms, -16.3dBu, with a 0 dBFS sinewave input

Synchronization:
- Synchronized via the input signal.
- Extremely efficient Jitter attenuation.
- Sampling frequencies supported: 44.1 kHz, 48.0 kHz, 88.2kHz, 96.0kHz, 176.4khz, 192kHz

Power:
- DC input voltage: 6 to 9 Volt
- DC input current: 900mA at 6V, 600mA at 9V
- Power consumption: 5.4 W

Measurements:
The measurements below have been taken at the following conditions (unless noted otherwise): 1 kHz measurement frequency, maximum selectable output level, 192kHz sampling frequency (Fs), 22kHz measurement bandwidth, unweighted, 0 dBr equals the output level at 0 dBFS input.

FrequencyResponse
Fs = 44.1 kHz, 0Hz-20kHz: within +- 0.25dB
Fs = 88.2 kHz, 0Hz-20kHz: within +- 0.25dB
Fs = 88.2 kHz, 0Hz-40kHz: within +- 0.8dB
Fs = 176.4 kHz, 0Hz-20kHz: within +- 0.25dB
Fs = 176.4 kHz, 0Hz-40kHz: within +- 0.8dB
Fs = 176.4 kHz, 0Hz-80kHz: within +- 2.5dB

Total Harmonic Distortion plus Noise (THD+N)
−116 dBr (0.00016 %) at −3 dBFS input level
−125 dBr (0.000056 %) at −40 dBFS input level
−125 dBr (0.000056 %) at −70 dBFS input level

Linearity
At 0 dBFS to −120 dBFS input level: less than ±0.4 dB deviation from ideal

Spurious components (including harmonics)
At 0 dBFS input level, maximum output level, 1 kHz, all components at less than −120 dBr
At 0 dBFS input level, maximum output level, 4 kHz, all components at less than −115 dBr

Crosstalk
Better than 120 dB, 20 Hz–20 kHz

Interchannel Phase Response
+- 0.05° 20 Hz–20 kHz
+- 0.30° 20 Hz–80 kHz